Fermilab

Beams Division Headquarters

July 18, 2001

To: Aesook Byon-Wagner

From: Phil Martin

Subject: NuMI Beam System Review, 7/18/01

The beam design presentation by P. Lucas showed the effects of single quads being moved by 1 mm. The orbit displacements were comparable to the corrector strength capabilities. This study should be carried one step further, namely to learn the maximum effect of random displacements of all the quads, using the canonical standard deviation of 0.25 mm.

The comment made with regard to high reliability of the normal MI beamline vacuum systems is not totally accurate. There have been a fair amount of problems with the high voltage connectors developing high leakage and tracking. There has been some improvement in painting the connectors, but this is still not a complete success. The problems are clearly associated with humidity. An R&D program should be started to learn what type of connection can survive the extreme humidity expected in the pretarget area.

The design and fabrication of stands for the Main Injector interlock area should be completed, so that full use can be made of both scheduled and unscheduled downtimes. One viewgraph shown seemed to indicate that one of the stands for the B2 magnets was position right in front of the accessway that passes underneath the MI floor, to the intermediate level of the NuMI stub. If this is true, that stand needs to be redesigned. You might want to revisit the possibility of using the hoists from the A1 line trolley for the NuMI stub installation.

The pretarget area installation will be difficult, as the NuMI project is fully aware. The conceptual design for the method of installation should be vigorously pursued. I also would have liked to have seen more information on the methods of installation of the various elements within the carrier pipe, at the very least a cross-section should be shown at the next review, and preferably also a description of the sequence of installation that is foreseen.